

# Long Island Botanical Society

Vol. 20 No. 4

The Quarterly Newsletter

Fall 2010

## A *Dodonaea* (Sapindaceae: Dodonaeoideae)-like capsule from the Upper Cretaceous of Long Island (Magothy Formation, Santonian Age)

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### Introduction.

Pursuant to a permit from the NYS Department of Parks, the senior author has been collecting specimens from the Upper Cretaceous outcrop in Caumsett State Park, on Lloyd Neck, Town of Huntington, Suffolk County, N.Y. The outcrop is assigned a Late Santonian Age (GEOLEX Database; [http://ngmdb.usgs.gov/Geolex/NewUnits/unit\\_2593.html](http://ngmdb.usgs.gov/Geolex/NewUnits/unit_2593.html) : 7-Jan-2007; accessed 7 January 2010), the age of which is estimated at 85.5 - 86.3 MYA (Everhard 2004). This past year, from the beach, we obtained a slab of iron sandstone that was flecked with mica and contained many mesofossil fragments. One fossil fragment was identifiable as a small fruit specimen (Figures 1, 2). A prominent spherical seed (Figure 3), embedded in a pair of membranous “wings,” caught our attention. Our general familiarity with winged and saccate fruits of the genera *Koeleria*, *Cardiospermum* and *Dodonaea* (Sapindaceae) immediately suggested a possible affinity of our fossilized fruit. Our fruit appeared to be winged but not saccate. In recognition of the winged nature of the fruit and the location in which it was discovered, we are naming it *Alatacarpus caumsettensis*. We reviewed the literature on all three genera and concluded that the closest affinity of our fossil was with *Dodonaea* (Figures 4, 5, 6). This is a

genus of 68 tropical and warm climate species. It has a world-wide range between 41.2° S and 33.3° N, and it has diversified most widely in Australia. In Florida, *Dodonaea viscosa* is known as the hop bush. *Dodonaea* was used as a substitute for hops in Australia. A red-fruited variety is commonly planted as an ornamental in Hawai‘i, where it is also a source of red dye (Mabberley 2008).

Note: In this paper, morphological terminology follows Harris and Harris (2001). Systematics follows Cronquist (1981), Mabberley (2008) and Harrington et al. (2005).

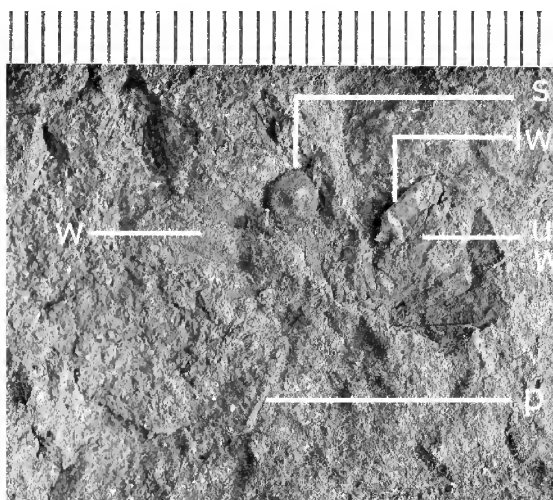


Fig. 1 Fruit of *Alatacarpus caumsettensis*.

Photo of original holotype specimen. Parts of three wings of this capsule can be recognized. Key: p= pedicel (stalk); s= seed; w=wing (distal portion missing; outline of proximal portion can be discerned); lw=lower wing (larger fragment of a wing that lacks the proximal half); uw= upper wing (small fragment of a wing that sits above a larger fragment). Scale in millimeters.

### Sapindaceae in the Magothy Formation.

Since the publication of Hollick's (1906) classical description of the Cretaceous paleoflora of the northeastern coast, Lloyd Neck has been known as a premier locality for plant fossils of the Magothy Formation. A review of Hollick's drawings and descriptions shows that the Sapindaceae is represented by a few fossil leaflets. These are determined to be Sapindaceae only because of the falcate (curved) form of the leaf and the slightly oblique (asymmetrical) base. The figured specimen that contains the best-preserved leaf venation more closely resembles *Liriodendropsis* (Continued on pg 27)

## Long Island Botanical Society

Founded: 1986  
Incorporated: 1989

The Long Island Botanical Society is dedicated to the promotion of field botany and a greater understanding of the plants that grow wild on Long Island, New York.

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## Society News

### LIBS 25th ANNIVERSARY FIELD TRIP TO FLORIDA \*\*\*ATTENTION! - IMPORTANT CORRECTION!\*\*\*

The \$300 deposit for the 2011 LIBS trip to Florida is due November 1, 2010, NOT January 1, 2011 as incorrectly stated in the recent mailing. We need an accurate head-count to lock into prices (including air fare, motels, & van rentals). The trip dates are from March 30th to April 8th, 2011 and include visits to Florida's most botanically rich localities. Local experts will be our guides to orchid hotspots, pitcher plant bogs, live oak/palmetto forests, old-growth pond cypress stands, and other interesting botanical sites. Trip walks/hikes will be easy; we also will be observing spectacular bird life. The trip is limited to 20 participants. Please contact Barbara Conolly or Eric Lamont for additional information.

New LIBS Field Trip Chair: Mike Feder has volunteered to serve as chairman of the field trip committee. Mike is an active field botanist familiar with Long Island's (and the greater Metro region's) flora and vegetation; he already has commitments from 5 field trip leaders for the 2011 season. Mike works as a Crew Chief for New York City Department of Parks & Recreation Natural Resources Group.

Tidal Marshes of Long Island, New York is now "in press". Text proofs have been reviewed by editors and delivery of copies is scheduled for late October 2010. This treatise is a joint publication of the Torrey Botanical Society and LIBS and will appear as volume 26 of the Memoirs of the Torrey Botanical Society. Information on ordering will be forthcoming.

### SUBMISSIONS WANTED

#### For the LIBS Quarterly Newsletter

Please send articles, poems, photographs  
and letters to the editor to:

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### LIBS Member Electronic Mailing List

LIBS is creating an electronic mailing list (an email and telephone list) so that our members can better stay in touch with each other. The list is for members' use only and will not be distributed in any way.

To join the list, please send an email to Joanne Tow at

**[BOTANY2003@HOTMAIL.COM](mailto:BOTANY2003@HOTMAIL.COM)**

Subject line: LIBS. Message: your last name, first name,  
email, phone number, town and state.

(*A Dodonaea*, Cont. from page 25)

(Magnoliaceae) in that venation pattern (see Plate XXXIII, Figures 16-20). Hollick (1906, Plate VII, pp. 144-145) also figures a number of seeds and fruits. His Figures 14 and 15 (*Carpolithus* spp.) are spherical seeds that could be *Alatacarpus caumsettensis*. Sapindaceae is not listed as a family present in the "Flora of the Amboy Clays" (Newberry 1895), which is a massive work describing a stratum underlying the one that crops out on the cliffs at Caumsett State Park.

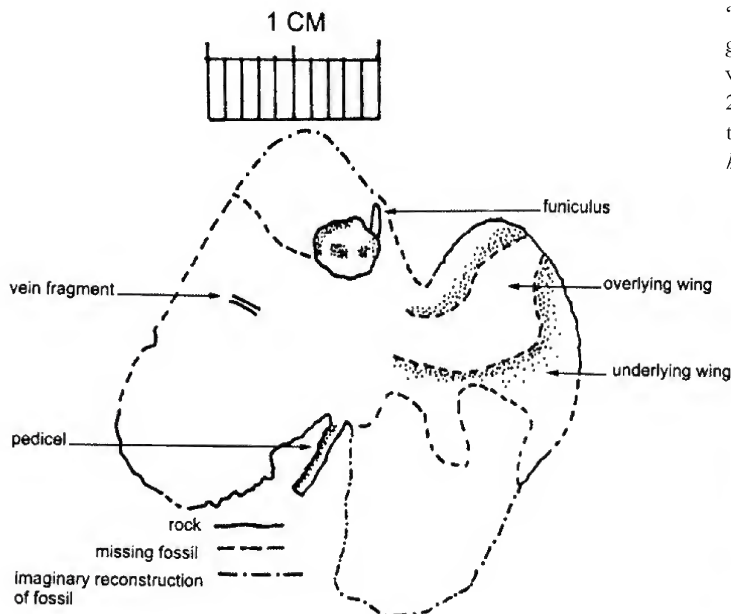


Figure 2. Line drawing of the fossil specimen in Figure 1 (reconstruction based on the holotype and showing the diagnostic characters of the new genus and species; drawing by MG).



Figure 3. Seed of *Alatacarpus*. This is a magnified portion of Figure 1. Note two depressions ("dimples") on surface of seed, and the funiculus attached at upper right of seed. Curved line at lower center of seed appears to be an artifact. Scale in millimeters.

The seeds of *Dodonaea* were the subject of a recent study of physical dormancy (Turner et al. 2009). We quote from Turner's article:

"Following dormancy break (opening of water gap), initial uptake of water by the seed occurs only through the water gap.

"The water gap in *Dodonaea petiolaris* seeds was identified as a small plug in the seed coat adjacent to the hilum and opposite the area where the radicle emerges.

"[T]he plug must be dislodged before the otherwise intact seed can germinate. The plug was dislodged... by dipping seeds in boiling water for 2.5 min or by incubating seeds on a moist substrate at 20/35 °C for 24 weeks. The same kind of water gap was found in three other species of Sapindaceae, *Diplopeltis huegelii*, *Distichostemon hispidulus* and *Dodonaea aptera*."

(Continued on pg 28)

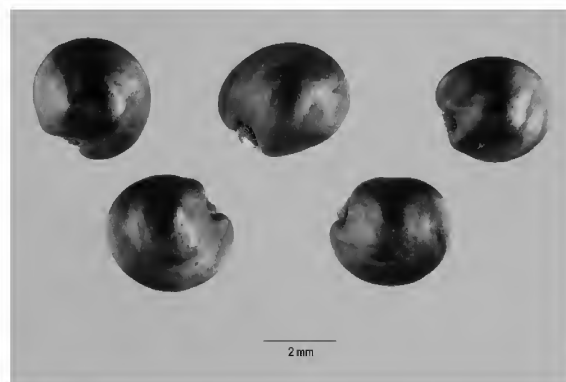


Figure 4. Seeds of *Dodonaea*. Note sub-globose to lenticular shape, "dimples" and hilar area on each seed (USDA, ARS, National Genetic Resources Program. [www.ars-grin.gov/.../Dodonaea\\_viscosa\\_nsh.jpg](http://www.ars-grin.gov/.../Dodonaea_viscosa_nsh.jpg)).



Figure 5. *Dodonaea viscosa* capsule with two wings. Hand holds persistent style; pedicel is distal to style, it projects outward at the base of the two wings (cropped from photo by Forest and Kim Starr as starr-090405-5600).



(*A Dodonaea*, Cont. from page 27)

### Systematics

Division -- Magnoliophyta

Class -- Magnoliopsida

Subclass -- Rosidae

Order -- Sapindales

Family -- Sapindaceae

Tribe -- Dodonaeoideae

Genus -- *Alatacarpus caumsettensis* Grell and Goudket

### gen. et sp. nov.

(Genus name refers to the winged nature of the fruit. Specific epithet refers to the site of collection, Caumsett State Historic Park, Lloyd Harbor, Long Island, New York, U.S.A.)

**Diagnosis.** An alate capsule (restored length ca. 20 mm; restored width ca. 25 mm) showing portions of three wings, and borne on a short pedicel. Traces of veins are barely visible on at least one winged segment. A single sub-globose to lenticular seed (ca. 3 mm) is clearly visible at the center (toward the top of the specimen). A short funiculus is present, appearing somewhat displaced distally; it attaches the seed to the central axis of the fruit. Central axis and surrounding tissue form an undifferentiated mass central to the wings. The seed has two shallow pits or depressions on the visible surface.

**Holotype:** AGMG 11-09-3; USNM catalog # 534035. Deposited in the Department of Paleobiology, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

### Discussion

The Magothy Formation was first recognized by Darton (1893), who distinguished it from the underlying Potomac Formation of Maryland, and named it after its principal outcrop there, along the Magothy River. Lewis and Kümmel (1915) first applied the name "Magothy Formation" to New Jersey strata of the Upper Cretaceous. They were able to distinguish it because it "rests unconformably upon the Raritan..." Further, they related the Magothy to the Ripley Formation of the southeastern U.S. and to the "Senonian" of Europe. They stated, "... the flora is abundant and represents a more recent aspect than that of the Raritan..." Sirkin (1986) used pollen data to revise the stratigraphy of the Cretaceous age sediments on Long Island and to correlate them with the New Jersey strata.

Christopher (1979), in his paleopalynological study of New Jersey, was able to distinguish four zones of fossil pollen and spores in the Magothy and Raritan Formations. The first (oldest), he designated as *Complexiopollis-Atlantopollis* Zone (Woodbridge Clay and Sayreville Sand). The next oldest was

*Complexiopollis exigua-Santalacites minor* Zone (South Amboy Fire Clay). Above that was the *Pseudoplicapollis longianmulata-Plicapollis incisa* Zone (Old Bridge Sand and Amboy Stoneware Clay). The youngest was named *Pseudoplicapollis cuneata-Semioculopollis verrucosa* Zone (Morgan and Cliffwood beds).

The Rutgers/New Jersey Geological Survey Rift-Drift Core Repository (<http://geology.rutgers.edu/CPMagothy>; accessed Jan. 5, 2009) reclassified the formations of coastal New Jersey to conform to new information collected and interpreted from recent drill cores taken at Ancora, Ocean View and Bethany Beach, New Jersey (Miller et al. 2003). Rutgers recognized the great "disconformity" between the Magothy and Raritan Formations at the boundary between the "Bass River/Raritan" stratum and Sayreville Sand (now, therefore, a Magothy Formation member). They dated the boundary to a major "eustatic lowering" during mid-Turonian. Thus, the members of the Magothy Formation were recognized as (oldest to youngest): Sayreville Sand, Old Bridge Sand, South Amboy Fire Clay, Amboy Stoneware Clay, Morgan (cross-bedded sand and mud), and Cliffwood (sands and laminated clay). Therefore, recognition of an outcrop of the Raritan Formation on the beach at Caumsett State Park (Greller and Goudket 2007) must be withdrawn, since it was based on the information that the South Amboy Fire Clay was a member of the Raritan Formation. Nevertheless, based on the presence of *Devalquea* there, the fossil-bearing bed that is exposed on the Caumsett beach likely corresponds to the South Amboy Fire Clay member of the Magothy Formation. Consequently, we could then interpret the strata on the cliffs (base to top) as corresponding to one, two or all of the following: Amboy Stoneware Clay, Morgan and Cliffwood members of the Magothy Formation.

### Acknowledgments

The authors thank Gerry Moore, Director of Science, Brooklyn Botanic Garden, for reviewing the Systematics section and making valuable suggestions. We thank, especially, Leonard Krauss, Jr., Superintendent, Caumsett State Historic Park, for extending every courtesy in facilitating our collections. And, finally, thanks go to the New York State Department of Parks, Recreation & Historic Preservation - Long Island Region, for continuing permission to collect fossils at Caumsett State Historic Park.

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(Continued on pg 30)

## Plant Sightings

Compiled by Eric Lamont

*Acalypha australis*; Australian Acalypha, Asian Copperleaf (Euphorbiaceae, the Spurge Family). This species is a recent introduction to North America where it was first collected in 1989 from Kings and Queens counties, New York; since then it has been collected from four boroughs of New York City and adjacent northeastern New Jersey. Additionally, in 1993 Skip Blanchard reported *A. australis* from Port Washington, Nassau County, and in 2003 Rich Kelly reported it from Garden City. In 2010 Mike Feder reported a third population of *A. australis* from Nassau County, occurring in garden beds and along the border of lawns in Woodmere.

*Arethusa bulbosa*; Dragon's Mouth (Orchidaceae, the Orchid Family). In a recent letter to the LIBS editor, Guy Tudor wrote: "In the Summer 2010 issue of the LIBSnewsletter, I note the rediscovery of *Arethusa* on Long Island. Very nice, but . . . the statement that the last previous sighting was "25 long years ago" is not quite accurate. Jim Ash showed me an *Arethusa* site at Montauk on 31 May 1992; we revisited the site a year or so later and found fewer plants, and on 1 June 1996 we found only one flowering individual. I never revisited the site thereafter, but 1996 would make it 14 years."

*Botrychium oneidense*; Blunt-lobed Grape Fern (Ophioglossaceae, the Adder's-tongue Family). This delicate grape fern is listed as rare and endangered in New York. Historically, six populations of *B. oneidense* have been reported from Long Island but only one, from Caleb Smith State Park, has been recently observed. Rich Kelly reported that Skip Blanchard first showed him the Caleb Smith population on 2 Feb. 2003; Rich saw the fern a few times after that but doesn't have exact dates. He searched for it but did not find any individuals on various dates in 2009 and 2010, and most likely 2008 as well.

*Cypripedium acaule forma albiflorum*; white-flowered form of Pink Lady's-slipper, Moccasin Flower (Orchidaceae, the Orchid Family). David Taft reported this uncommon albino form of *C. acaule* from near West Hills County Park in western Suffolk County. As one proceeds northward into New England and Canada, *forma albiflorum* becomes more frequent.

*Eclipta prostrata*; Yerba-de-tago (Asteraceae, the Aster Family). In September 2010, Eric Lamont and Lisa Campbell from the New York Botanical Garden were searching for a rare species of *Xyris* at the north end of Lake Ronkonkoma. They didn't find the *Xyris* but did find a large population of *E. prostrata* in the extensive wetlands north of Lake Shore Road. Before 2001, only three extant populations of this southern species were known from New York. In the early 2000s, *E. prostrata* became established in Kings County,

extended its range into Nassau County, and in 2004 it was collected from near the shore of Huntington Bay in westernmost Suffolk County. The 2010 report documents the easternmost population of this species on Long Island.

*Eichhornia crassipes*; Water-hyacinth (Pontederiaceae, the Water-hyacinth Family). Rich Kelly reported water-hyacinth from a pond at Alley Pond Environmental Center, Queens County, and Mike Feder reported seeing it last year in Oakland Lake, Queens County. After almost 20 years of observing this potentially invasive aquatic plant on Long Island, it does not (yet) appear to be winter hardy. Here is a synopsis of previous reports from Long Island: 1991: Massapequa Preserve, Nassau Co.; 1992: Bill Richards Park, Smithtown Township, Suffolk Co.; 2001: Shu Swamp, Nassau Co.; 2001: Scudders Pond, Oyster Bay Township, Nassau Co.; 2004: Scudders Pond again with comment, "winter-killed 3 yrs ago, it is now "back in force""; 2004: Brookhaven National Lab, Suffolk Co.; 2005: Mill Pond, Oyster Bay Township, Nassau Co.

*Euphorbia dentata*; Wild Poinsettia, Toothed Spurge (Euphorbiaceae, the Spurge Family). Mike Feder reported a naturalized colony of wild poinsettia from Jamaica Bay Wildlife Refuge. The LIBS *Draft Atlas of Long Island Plants* contains a 1992 report of *E. dentata* from "East Meadow, Jamaica Bay"; at this time it is not certain whether these two reports represent the same colony. *Euphorbia dentata* is closely related to the very popular *Poinsettia* that many people buy around the winter holidays. The sap of *E. dentata* and many other species from this genus can be irritating to the skin and eyes.

*Euphorbia latyris*; Gopher Spurge, Caper Spurge, Mole Plant (Euphorbiaceae, the Spurge Family). A small colony of *E. latyris* was found in Forest Park, Queens County, by Mike Feder. This potentially invasive plant from the Mediterranean region is currently quite uncommon on Long Island, being previously reported from only three other localities on the island.

*Froelichia floridana*; Plains Snakecotton, Large Cottonweed (Amaranthaceae, the Amaranth Family). **NEW RECORD FOR NEW YORK!** Mike Feder found a spontaneously occurring population of *F. floridana* at Jamaica Bay Wildlife Refuge, Queens County. The population consists of approximately 50 scattered individuals in sandy soil above the high tide line east of the subway tracks, northeast of East Pond. A voucher specimen has been collected and will be deposited at Brooklyn Botanic Garden (BKL). The online Flora of North America (2004) distribution map for *F. floridana* shows it ranging north on the Atlantic coastal plain to southeastern North Carolina with a disjunct

(Cont. on page 30)

(*Plant Sightings, Cont. from page 29*)

occurrence in Maryland. The online USDA Plants Database (2010) distribution map shows that *F. floridana* extended its range northward along the coastal plain, with newly established occurrences in Virginia, Delaware, and New Jersey. *Froelichia floridana* is an easy species to identify in the field because of its long flowering stems, swollen nodes, and cotton-like flower clusters; it grows much taller and more robust than *F. gracilis* (slender cottonweed), another recent newcomer to southeastern New York.

***Platanthera pallida***; Pale Fringed Orchid (Orchidaceae, the Orchid Family). For the past few years, Eric Lamont and Bob McGrath have been reporting on extensive browsing of *P. pallida* at Napeague. In August 2010, Larry Penny added his observations: "On the Monday before last [August 16th], I checked the only home of one of the world's most newly described orchid, the pale crested fringed orchid, *Platanthera pallida*. The count was a disappointment. Yes, there were several to be tallied, but all but a few of the flowering heads had been snipped off by some browsers, either deer or cottontail rabbits or both. That means there would be very few seeds to start new orchids for next spring. However, there were many, many first-year plants, single leaves sticking up, so I felt a little better about next year's prospects."

***Salvia reflexa***; Lance-leaved Sage (Lamiaceae, the Mint Family). **NEW RECORD FOR LONG ISLAND!** Eric Lamont collected this spontaneously occurring annual mint from a narrow meadow bordering a woodland in Northville, Riverhead Township, Suffolk County (just north of North Fork Preserve). *Salvia reflexa* is native to the prairies of Mid-western states and further west, and is adventive eastward. It has been reported from three upstate counties in New York and from two counties in northern New Jersey. It is not known whether this species will continue to persist on its own at its Long Island locality.

***Tribulus terrestris***; Puncture-vine (Zygophyllaceae, the Caltrop or Creosote-bush Family). Rich Kelly found a population of puncture-vine occurring along the bike path at Jamaica Bay Wildlife Refuge, Queens County. This native of the Mediterranean region, noted for its hard, spiny fruits, is well established as a roadside weed in the western United States. Stanley Welsh of Utah commented, "This tribulation of the earth is a vicious weed, leaving in its wake a refuse heap of punctured tires and painfully injured feet. This tribulation of the earth is adequately named scientifically."

***Vicia grandiflora***; Large-flowered Vetch, Showy Vetch (Fabaceae, the Pea or Bean Family). Mike Feder reported a colony of this non-native vetch with showy yellow flowers from the 68.5 acre Four Sparrow Marsh Preserve (N.Y. City Parks), south of Mill Basin, Kings County. According to the LIBS *Draft Atlas of Long Island Plants*, this is only the third report of this species for Long Island.

(*A Dodonaea, Cont. from page 27*)

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## Dear LIBS members,

As the coordinator and founder of the Long Island Native Grass Initiative (LINGI), I am appealing to LIBS members for assistance.

In the fields of Restoration Ecology and Conservation Biology, conserving biodiversity has long been focused at the habitat, population, and species levels. Recently, the importance of protecting biodiversity at a genetic level has been recognized as we have begun to understand the implications of the loss of biodiversity within native plant populations and communities.

The use of local, genetically native "ecotyped" plant material in landscaping and restoration activities is now being promoted to help preserve the genetic heritage and molecular biodiversity of native plant species. Environmental organizations, the general public, and governmental agencies have responded positively to this concept, and have begun advocating the use of such plant material, thereby creating a demand for these materials.

Unfortunately the use of ecotypic native plants in restorations and landscaping activities has been hampered by the lack of native plant source material needed to create a commercially available product.

The Long Island Native Grass Initiative (LINGI), is a cooperative effort of over 30 non-profit organizations, governmental agencies, and nursery professionals whose goal is to "bridge this gap" between supply and demand, by providing initial sources of native plant materials to further commercial native plant propagation activities. LINGI is an all-volunteer, relatively unfunded organization whose members donate their time in various capacities. Some are involved solely in seed collecting (generally land managers), while others such as master gardeners apply their expertise to plant propagation for the plant sale and founder plot creation.

To date we have been able to scientifically and systematically harvest seed from approximately 20 species from the wild lands and urban areas of Long Island. The first full harvest of the *S. nutans*, *S. scoparium*, *A. gerardii*, and *P. virginatum* founder plots was achieved in fall of 2008, with the resulting seed provided to Ernst Conservation Seed (ECS) for commercial increase and sale. In 2011, the first LINGI Ecotyped - Source Identified Certified seed for each of these species will be commercially available, through ECS, marking a great milestone for LINGI.

Proving our abilities to create such a product and recognizing a strong demand for native plant materials (both

plugs and seed), we have expanded our targeted species for collection. We plan to add grasses such as purple lovegrass (*Erograstis spectabilis*) and purple top (*Tridens flavus*); forbs such as milkweeds (*Asclepias spp*), wild indigo (*Baptisia tinctoria*), asters (*Symphotrichum spp*), goldenrod (*Solidago spp*); and shrubs/trees such as bayberry (*Morella pensylvanica*), pitch pine (*Pinus rigida*), and bear oak (*Quercus ilicifolia*). In order to effectively accomplish this and maintain collections that are true to name, it is critical not only to locate suitable populations, but that species be properly identified and authenticated.

In order to capture as much genetic diversity as possible, it is important that we identify and monitor multiple populations throughout the island and be available to collect seeds as they ripen. Although I have a keen eye and quick ability to identify species, I am not familiar with all of Long Island's native species (although I am doing pretty well for a northern New York native). And as just one person, it is difficult to find time to travel to and monitor multiple field sites. I know that LIBS members, residing throughout Long Island, have the technical skills for the task of identifying target species and recognizing ripened seeds and fruits.

LINGI seeks your assistance so that we may diversify our seed collections and thereby further our mission to create and provide ecotypic plant materials to the nursery and landscape industry and the general public. I hope that you will consider this invitation to apply your skills to this effort, which would enable me to focus more time on grant writing, the hiring of interns, the expansion of the seed production plots and the coordination of other LINGI activities.

In the larger realm, your involvement will help to protect the genetic heritage of Long Island's natural areas by ensuring that a source of native plant materials is available for use in the landscape.

Thank you for your time and consideration.  
Best Regards,

Polly Weigand

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## UPCOMING PROGRAMS

**October 12, 2010\***      Tuesday, 7:30 PM  
**Margaret Conover: "Botanical Reflections: from Peck's Woods to Petermannia."** This talk will be illustrated with Dr. Conover's botanical photographs from the remote areas of Iceland, Malaysia, Australia, Scotland, and Long Island. Spring ephemerals, apical meristems, island biogeography, big trees, leaf venation patterns, recalcitrant houseplants, and green aliens are among the topics she will address. Margaret is editor of the LIBS newsletter and a part-time researcher and teacher at the New York Botanical Garden and Stony Brook University.

*Location: Museum of Long Island Natural Sciences, Earth and Space Science Building, Gil Hanson Room (Room 123), SUNY at Stony Brook, Stony Brook*

**November 9, 2010\***      Tuesday, 7:30 PM  
**Dave Taft: "Orchids Among Us."**  
**Learn how to discover and document orchids.** This talk will highlight the native wild

orchids of the heavily urbanized Northeast, notably those within driving range of New York City. Dave is a Manager for the National Park Service at Gateway National Recreation Area, and he is the Conservation Chair for the Greater New York Orchid Society.

Location: Bill Paterson Nature Center, Muttontown Preserve, East Norwich

**December 14, 2010\***      Tuesday, 7:30 PM  
**Members Night:** Members are welcome to bring photos, stories, specimens, and tales of peculiar sightings of favorite plants. A great opportunity to show what you have found while exploring on Long Island or elsewhere. Please call Rich Kelly (516-354-6506) in advance to advise as to the approximate number of images/slides that you would like to show and preferred medium of presentation. Thanks.

Location: Bill Paterson Nature Center, Muttontown Preserve, East Norwich

■► **Reminder - no meetings in January or February. Next meeting March 9, 2011.**

\* Refreshments and informal talk begin at 7:30 p.m. Formal meeting starts at 8:00 p.m.  
Directions to Muttontown or Stony Brook: 516-354-6506